## CLAIMS

What is claimed is:

1. (amended) A device for influencing cell-growth mechanisms in vessels, in particular blood vessels, of a human or animal body, comprising:

an excitation device for producing stimulation currents in a region to be treated of the vessel, wherein the stimulation currents have a frequency and/or a modulation frequency in the range of frequencies at which distribution of secondary messenger substances controlling cell growth in the cells of the vessel is influenced.

2. (amended) The device of claim 1, wherein the excitation device produces the stimulation currents without contact.

3. (amended) The device of claim 1, wherein

the frequency and/or the modulation frequency of the stimulation currents is in the range of frequencies at which the distribution of cyclic adenosine monophosphate (cAMP) in the cells of the vessel is inhibited or stimulated.

4. (amended) The device of claim 1, wherein

the excitation device produces stimulation currents having frequency and/or modulation frequency in the range of frequencies at which distribution of secondary messenger substances producing cell growth in the smooth muscle cells and/or the endothelium cells and/or the fibroblasts of a vessel is inhibited or stimulated.

5. (amended) The device of claim 1, wherein

the stimulation currents in the region to be treated of the vessel have a frequency and/or a modulation frequency of up to 200 Hz.

6. (amended) The device of claim 1, wherein

the excitation device comprises a time control device for producing a reduction in the level of stimulation intensity and/or the frequency of stimulation.

7. (amended) The device of claim 1, wherein

the excitation device directly induces the stimulation currents.

8. (amended) The device of claim 7, wherein

the excitation device comprises an induction device for producing at least one local magnetic alternating field in the treatment region of the vessel.

9. (amended) The device of claim 7, wherein

the induction device comprises at least one horseshoe-shaped electromagnet.

10. (amended) The device of claim 9, wherein

the excitation device further comprises a positioning device for positioning at least one pole of the electromagnet with respect to the body.

11. (amended) The device of claim 1, wherein

the excitation device contactlessly introduces stimulation energy to produce the stimulation currents into an implant, which is arranged in the region to be treated of the vessel.

12. (amended) The device of claim 11, wherein

the excitation device comprises an induction device for inductively coupling the stimulation energy into the implant.

13. (amended) The device of claim 11, wherein

the excitation device comprises a transmitter device for coupling the stimulation energy in the form of electromagnetic oscillations into the implant, the implant comprising an antenna element.

14. (amended) The device of claim 13, further comprising

a device for focusing the electromagnetic oscillations in the region of the implant.

15. (amended) An implant for insertion into a vessel, in particular a blood vessel, of a human or animal body, said implant having an excitation device nearby, said implant comprising :

a tubular body for bearing against the wall of the vessel,

wherein the tubular body comprises, in at least in a portion-wise manner, a soft-magnetic material for concentration of a magnetic field produced by the excitation device.

16. (amended) An implant for insertion into a vessel, in particular a blood vessel, of a human or animal body, wherein the implant stimulates cells of the vessel by means of stimulation currents, such stimulation influencing cell-growth mechanisms.

17. (amended) The implant of claim 16, wherein the implant couples out stimulation energy that is coupled-in in the form of stimulation currents.

18. (amended) The implant of claim 17, wherein the implant comprises a tubular body to bear against the wall of the vessel and

wherein the tubular body comprises, in at least a portionwise manner, an induction coil to provide a resonance circuit.

19. (amended) The implant of claim 16, wherein the implant comprises

an antenna element to couple out stimulation energy coupled in by means of electromagnetic waves, in the form of stimulation currents.

20. (amended) The implant of claim 19, wherein the implant comprises a dipole antenna.

21. (amended) The implant of claim 16, comprising

a coupling-out unit comprising a conversion unit for conversion of the coupled-in stimulation energy into stimulation currents.

22. (amended) The implant of claim 21, wherein the conversion unit comprises an electronic circuit for conversion of a high-frequency current into a

stimulation current which involves a low frequency and/or low-frequency modulation.

23. (amended) The implant of claim 22, wherein the electronic circuit is provided in a coating on the implant.

24. (amended) The implant of claim 23, wherein the implant couples out stimulation currents at a frequency and/or a modulation frequency of up to 200 Hz.

25. (amended) The implant of claim 16, wherein the implant couples out stimulation currents whose frequency and/or modulation frequency is in the range of frequencies at which the distribution of secondary messenger substances controlling cell growth, in particular cyclic adenosine monophosphate (cAMP), in the cells of the vessel is influenced.

26. (amended) The implant of claim 25, wherein the frequency and/or modulation frequency is in the range of frequencies at which the distribution of secondary messenger substances controlling cell growth in the smooth muscle cells and/or the endothelium cells and/or the fibroblasts of the vessel is influenced.

27. (amended) An arrangement comprising a stimulation device as set forth in claim 11 and an implant as set forth in claim 17.

28. (new) The device of claim 2, wherein

the frequency and/or the modulation frequency of the stimulation currents is in the range of frequencies at which the distribution of cyclic adenosine monophosphate (cAMP) in the cells of the vessel is inhibited or stimulated.

29. (new) The device of claim 3, wherein

the excitation device produces stimulation currents having frequency and/or modulation frequency in the range of frequencies at which distribution of

secondary messenger substances producing cell growth in the smooth muscle cells and/or the endothelium cells and/or the fibroblasts of a vessel is inhibited or stimulated.

30. (new) The device of claim 28, wherein

the excitation device produces stimulation currents having frequency and/or modulation frequency in the range of frequencies at which distribution of secondary messenger substances producing cell growth in the smooth muscle cells and/or the endothelium cells and/or the fibroblasts of a vessel is inhibited or stimulated.

31. (new) The device of claim 5, wherein

the stimulation currents in the region to be treated of the vessel have a frequency and/or a modulation frequency in the range of from 10 to 100 Hz.

32. (new) The device of claim 30, wherein

the stimulation currents in the region to be treated of the vessel have a frequency and/or a modulation frequency of up to 200 Hz.

33. (new) The device of claim 32, wherein

the stimulation currents in the region to be treated of the vessel have a frequency and/or a modulation frequency in the range of from 10 to 100 Hz.

34. (new) The device of claim 6, wherein the reduction is stepwise.

35. (new) The device of claim 6, wherein the reduction is continuous.

36. (new) The device of claim 33, wherein the excitation device comprises a time control device for producing a reduction in the level of stimulation intensity and/or the frequency of stimulation.

37. (new) The device of claim 36, wherein the reduction is stepwise.

38. (new) The device of claim 36, wherein the reduction is continuous.

39. (new) The device of claim 8, wherein

the induction device comprises at least one horseshoe-shaped electromagnet.

40. (new) The device of claim 39, wherein

the excitation device further comprises a positioning device for positioning at least one pole of the electromagnet with respect to the body.

41. (new) The device of claim 36, wherein

the excitation device contactlessly introduces stimulation energy to produce the stimulation currents into an implant, which is arranged in the region to be treated of the vessel.

42. (new) The device of claim 11, wherein

the implant is a stent.

43. (new) The device of claim 41, wherein

the implant is a stent.

44. (new) The device of claim 41, wherein

the excitation device comprises an induction device for inductively coupling the stimulation energy into the implant.

45. (new) The device of claim 41, wherein

the excitation device comprises a transmitter device for coupling the stimulation energy in the form of electromagnetic oscillations into the implant, the implant comprising an antenna element.

46. (new) The device of claim 13, further comprising

a device for focusing the electromagnetic oscillations in the region of the implant.

47. (new) The implant of claim 18, comprising

a coupling-out unit comprising a conversion unit for conversion of the coupled-in stimulation energy into stimulation currents.

48. (new) The implant of claim 20, comprising

a coupling-out unit comprising a conversion unit for conversion of the coupled-in stimulation energy into stimulation currents.

49. (new) The implant of claim 47, wherein the conversion unit comprises an electronic circuit for conversion of a high-frequency current into a stimulation current which involves a low frequency and/or low-frequency modulation.

50. (new) The implant of claim 48, wherein the conversion unit comprises an electronic circuit for conversion of a high-frequency current into a stimulation current which involves a low frequency and/or low-frequency modulation.

51. (new) The implant of claim 49, wherein the electronic circuit is provided in a coating on the implant.

52. (new) The implant of claim 50, wherein the electronic circuit is provided in a coating on the implant.

53. (new) The implant of claim 51, wherein the implant couples out stimulation currents at a frequency and/or a modulation frequency of up to 200 Hz.

54. (new) The implant of claim 24, wherein the implant couples out stimulation currents at a frequency and/or a modulation frequency in the range of from 10 Hz to 100 Hz.

55. (new) The implant of claim 53, wherein the implant couples out stimulation currents at a frequency and/or a modulation frequency in the range of from 10 Hz to 100 Hz.

56. (new) An arrangement comprising a stimulation device as set forth in claim 13 and an implant as set forth in claim 19.